

REMARKS

The courtesies extended to the undersigned by Examiner Tawfik during the interview held July 27, 2007 are acknowledged and appreciated. During that interview, it was ascertained that the Examiner's identification of the prior art document, which has been relied on during the entire prosecution of the subject application, as the Lang DE 198 29 095 reference, was incorrect. It was noted during the course of the interview that the English language abstract, which corresponds to the Lang DE 198 29 095 prior art reference, was stapled to the front of UK document 946,816. It is unfortunate that the prosecution of the subject application has been unnecessarily protracted because of the Examiner's failure to properly cite the prior art document being relied on and his failure to also appreciate his error in response to the several instances in prior Amendments wherein the undersigned has questioned the Examiner's characterization of certain features of the alleged Lang reference. It is hoped that the Examiner will fully consider the subject Amendment and will provide the undersigned the opportunity to present arguments regarding the differences that exist between the subject application and the actual prior art reference, UK 946,816 being relied on by the Examiner.

It is believed that the claims now pending in the subject application are not rendered obvious by the prior art cited and relied on by the Examiner. Reexamination and reconsideration of the application, and allowance of the claims is respectfully requested.

The subject invention, as recited in currently amended claim 42, and as disclosed and discussed in the specification of the subject application, is directed to a longitudinal fold former that includes a support body with leg areas and a nose section. Both of the leg areas, and also the nose section have rigid air permeable support surfaces that are adapted to engage the web which is being longitudinally formed by the former. Both of the leg areas and also the nose section have surface layers of micro-porous, air permeable material on the support surfaces of

the leg areas and the nose support surface of the nose section. These micro-porous air permeable materials have micro-openings of open pores with a mean diameter of less than 150 µm. The micro-porous surface layer on the leg areas provides a first fluid output between the leg support surfaces and the web and has a first fluid permeability per unit of area. The second surface layer of micro-porous material that is on the nose support surface provides a second fluid output, which is greater than the first fluid output, between the web and the nose support surface. The second layer of the micro-porous material also has a second fluid permeability per unit of area, which second fluid permeability is greater than the first fluid permeability that is provided at the two leg areas.

In the Office Action of July 13, 2007, which was issued in response to the filing of an RCE by the applicants, the claims were rejected for the third time under 35 USC 103(a) as being unpatentable over Lang, DE 198 29 095. As discovered during the interview of July 27, 2007, the Examiner has been citing the reference as Lang, a German document, while in actuality, he has been relying on UK 946,816. The following discussion will thus now be directed to the UK '816 reference which is believed to be the reference actually being relied on.

In the rejection of claim 42, the sole independent claim pending in the application, it was asserted by the Examiner that UK '816 shows a former with a support body, having first and second leg areas, via pipes 6 and 7; and a nose section located at the convergence of the first and second converging leg areas.

It was further asserted in the Office Action that the support surface of the leg areas had a first surface of a micro-porous air permeable material and having a first fluid permeability per unit of area. The nose section was asserted as also having a surface layer with a plurality of micro-openings of open pores of the micro-porous material and having a second fluid permeability per unit area.

The UK '816 reference (again mis-cited as Lang) was admitted as not having the first and second asserted coating of a micro-porous material with a diameter of less than 500 µm. It was recited that it would have been obvious to modify the UK '816 former "...with having the first and second coating of the mirror porous material with diameter of less than 500 µm and the second fluid permeability being greater than the first fluid permeability since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art."

It is respectfully but strenuously asserted that the Examiner has provided the UK '816 reference with features that are clearly not taught or suggested by the reference. It is also asserted that the Examiner's reliance on the use of routine skill in the art to discover an alleged optimum value of a result effective variable is in error.

UK '816 is directed to a paper web folding former and, as seen in the two drawings includes a forme plate 1 that is provided with inner bores 2, 3 along the former edges. These bores are supplied with air through pipes under the control of valves 8 and 9. A number of small blowing holes 4, 5 open through the edges of the former. The former shown in UK '816 also is provided with an apex region. That apex region has two bores 12 and 13, which are supplied with air by a single supply pipe 10 which is controlled by a valve 11. The two apex region bores 12 and 13 are provided with small blowing holes 14 and 15, again as may be seen quite clearly in Figs. 1 and 2 of UK '816.

In the Office Action, the UK '816 reference was recited as having "...a first surface layer of a micro-porous air permeable material on said support surface of each of said first and second converging leg areas..." UK '816 was also recited as having "...a second surface layer of a micro-porous air permeable material on said support surface of said nose section." It is clear, from a careful reading of the reference, that there is no teaching of the recited structure

in the reference. It is equally clear that the Examiner's characterization of the reference as having such a feature is based solely on the subject invention.

As discussed during the interview, it is generally well known to provide longitudinal web formers with fluid passages that aid in friction reduction as the paper web passes over the former. The relied on UK '816 reference is typical of such prior art formers. In fact, it is the UK equivalent of the German reference DE 11 42 878 which is set forth in the specification of the subject application as a typical prior art device.

In such prior art devices, the air openings are typically in the millimeter range, and are usually in the range of 1 to 3 mm. Note the discussion at paragraph 0014 of the Substitute Specification. With the use of such air openings, with a diameter range of 1 to 3 mm, the air flow is typically provided in a point-by-point manner to the material, also as is discussed at paragraph 0014. In the UK '816 reference, the specific sizes of the small blowing holes 4 and 5 in the leg areas of the former plate 1, and the sizes of the small blowing holes 14 and 15 in the apex area of the former plate 1 are not specified. However, since such formers are used to form paper webs destined to become newspapers, and because the blowing holes 4, 5, 14 and 15 are depicted so clearly in Fig. 1 of the UK '814 reference, and further in the absence of some discussion to the contrary, it would be reasonable to assume that they are at least in the 1 to 3 mm size range, as discussed in the Substitute Specification of the present application. It is understood that patent drawings are not to be held to be drawn according to scale. However, they can be construed as fairly depicting the disclosed invention. It is very clear that the blowing holes 4, 5; 14, 15 of UK '816 have a substantial diameter or cross-section. Absent any discussion to the contrary in the reference itself, its teachings must be taken as what are fairly described and depicted. A "small" blowing hole, taken in the context of the overall size of the former plate would, as depicted in Figs. 1 and 2 of UK '816 still have a

substantial diameter.

There is clearly no support in UK '816 for the Examiner's statement that the reference shows first and second layers of micro-porous, air permeable materials on separate support surfaces of the legs and apex of the former plate 1 of the UK '816 reference. As noted in a prior response, the mere attribution of a feature, by the Examiner, to a reference, in a complete absence of any teaching or suggestion of that asserted attribute, does not make the reference actually have that attributed feature. UK '816 recites and depicts "small" blowing holes. These are shown as discrete holes which are opening through the edges of the former. Those small holes extends directly from their respective bores 2, 3, 12 and 13 through the edges of the former and are directed toward an overlying web of paper.

The subject application discloses, and depicts in Fig. 1, a former with leg areas 03 that include air permeable support bodies 08 and on which a micro-porous material 09 has been applied as a surface layer. In this regard, note the discussion at paragraph 0027 of the Substitute Specification. The provision of such an air permeable leg area support surface for each leg is recited in claim 42. The provision of a first surface layer of a micro-porous air permeable material on the leg area support surface is also clearly recited in claim 42. UK '816 has no teaching or suggestion of such a structure. The gratuitous statement to that effect by the Examiner cannot provide support for a disclosure that is simply not present in the reference. As indicated previously, importation of language from the claims into the Examiner's discussion of what the reference is asserted to show does not, in fact, constitute a teaching by the reference.

The Substitute Specification of the subject application, and specifically paragraph 0035 thereof, also discusses the use of a micro-porous air permeable layer 09' in the nose area 04, which is different from the micro-porous air permeable layer used in the other areas of the

former. Claim 42 specifically recites the structure of the nose area and the difference in air permeability. The result is a difference in air support and air permeability between the leg areas and the nose area, again as recited in currently amended claim 42.

In the Office Action, it was asserted that the reference relied on, UK '816 shows the two areas; i.e. legs and nose of the former with first and second fluid permeabilities per area. That assertion is not supported by the clear teachings and disclosure of the reference. The size of the small holes 3, 4 14 and 15 in the leg and nose areas of the reference appears to be the same. Their spacings appear to be similar. The reference recites that the supply of air can be regulated so as to produce in the "open" region of the former, a correspondingly thick air cushion. Initially, it is noted that the term "open" appears only once in the reference. It is certainly not clear whether such an "open" area is at the nose or between the two legs. Since the drawing, in Fig. 1 shows a transverse line separating the apex bores 12 and 13 from the former edge bores 2 and 3, it is reasonable to assume that the open area is between the legs. In addition, the thick air cushion is provided by a variance of the air supply "...by virtue of the provision of each air pipe with its own valve..." This is not the same as the provision of surface layers of micro-porous air permeable materials, at the leg areas and at the nose section, with different fluid outputs and with different fluid permeabilities per unit of area. Variance of a thickness of an air cushion by variance of total air supply is not the same as variance of fluid output by variance of fluid permeability per unit of area. The UK '816 reference thus does not show, or suggest the features of currently amended claim 42.

In claim 42, as currently amended, the surface layers of micro-porous, air permeable material are recited as having a plurality of micro-openings with a mean diameter of less than 150 µm. The Substitute Specification of the subject application recites that these micro-openings are of a size which is on the order of ten times smaller than the bores used in the

past. In this regard, note paragraph 0014. In the prior art devices, such as the one shown in the UK '816 reference, which is cited in the subject application as one of the prior formers of which the inventors are aware, the air is applied to the material in a point-by-point manner. In other words, the generally known bores used in the past, and having a cross-section in the range of 1-3 mm, provide a plurality of spaced, individual points of support. In the present invention, the use of micro-porous, air permeable material, with a high hole density, the result is the formation of a much more uniform air cushion. Such an air cushion is much more homogeneous than were the prior point-by-point supports. .The result is that the distance between the surface of the former and the web of material can be reduced. Such a reduction provides better control of the path of travel of the web or webs and makes it less likely that the typically superimposed webs will come out of lateral registration. The volume flow of the air can also be substantively reduced. This provides lower noise levels, lower air losses and less compressed air capacity being required.

In the Office Action, it was again asserted that although the reference does not teach or suggest diameters of less than 500 μm , that such would be obvious to one of skill in the art because the "...discovery of an optimum value of a result effective variable involves only routine skill in the art." However, in the subject invention, the change of a size by an order of magnitude of ten is believed to not be the optimization of a result effective variable. Initially, the sheer change in magnitude; i.e. from 1 to 3 mm to less than 150 μm , is clearly outside of the range of a change that would involve only a routine skill in the art. The case law is equally settled that "A retrospective view of inherency is not a substitute for some teaching or suggestion supporting an obviousness rejection." (In Re Rijckaert, 9F. 3d, 1531, 28 USPQ 2nd 1955 (Fed. Cir. 1993). In that case, the prior art did not disclose what the Patent Office asserted was merely an optimization of prior art variables. In the present situation, the prior art fails to disclose or

suggest any sizes or size ranges of the disclosed small bores, but is one of the prior art documents asserted as typically using bores of 1 to 3 mm cross-sections. Thus it cannot be reasonably held that a 10 fold reduction in the magnitude of the sizes of the micro-pores provided in a micro-porous, air permeable material, which itself is not provided, can be held to be within any range of optimum values discoverable as a result of routine skill in the art. It is thus believed that currently amended claim 42 is not obvious over the UK '816 reference.

Various ones of the dependent claims have been amended to conform their language to that of believed allowable, currently amended independent claim 42. These claims are thus also believed to be allowable.

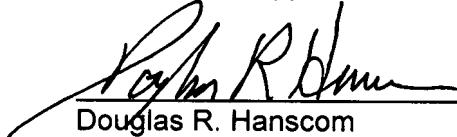
SUMMARY

Claim 42 has been further amended in an effort to clearly define the present invention over the prior art document, UK 946,816, actually being relied on by the Examiner in the rejections of the claims. As discussed during the interview, and for the reasons set forth above, it is believed that the claims now pending in the subject application are patentable over this reference. Allowance of the claims, and passage of the application to issue is respectfully requested.

Respectfully submitted,

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